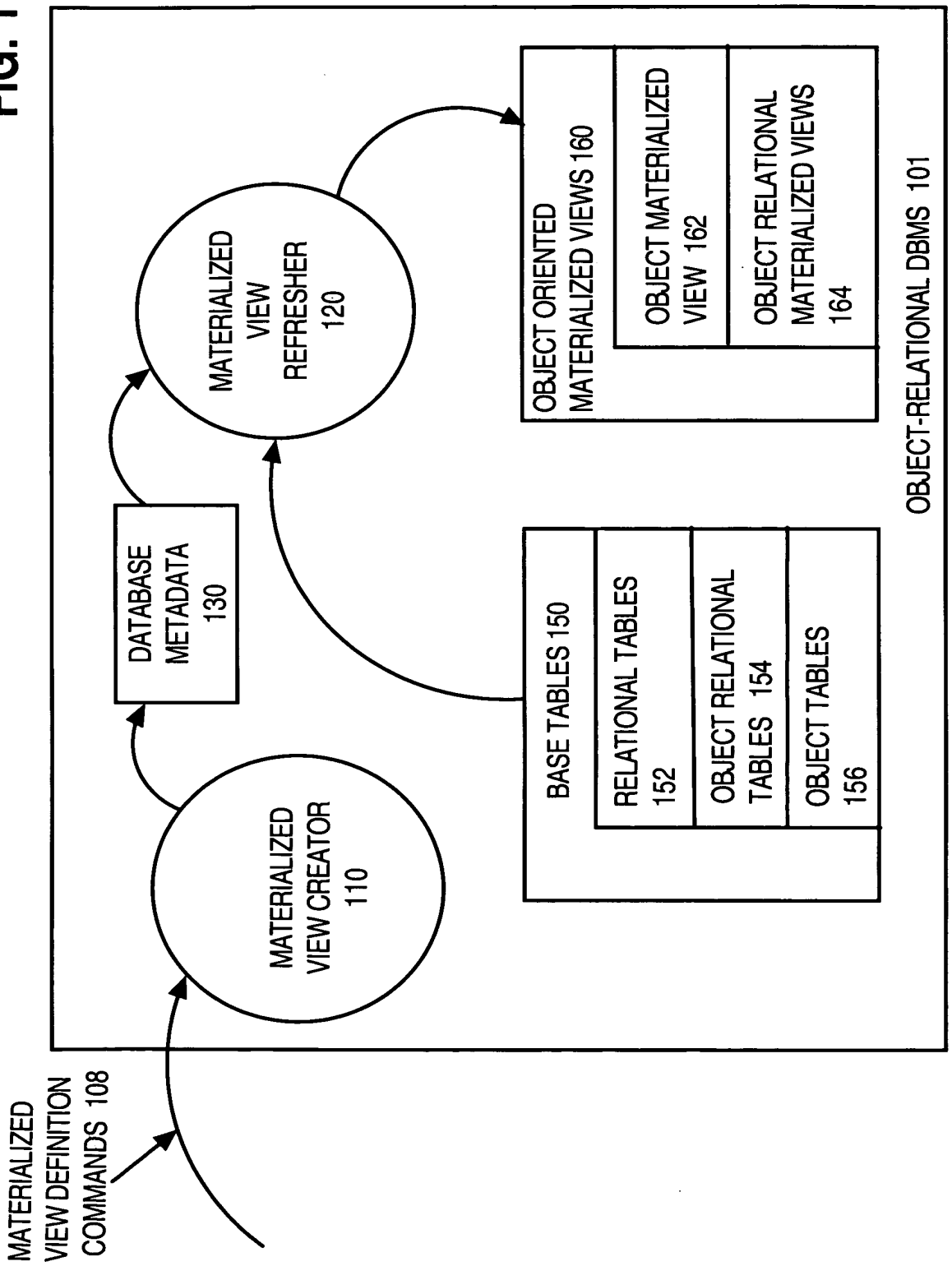
FIG. 1


MATERIALIZED VIEW DEFINITION COMMANDS 108
MATERIALIZED VIEW CREATOR 110
DATABASE METADATA 130
MATERIALIZED VIEW REFRESHER 120
BASE TABLES 150
RELATIONAL TABLES 152
OBJECT RELATIONAL TABLES 154
OBJECT TABLES 156
OBJECT ORIENTED MATERIALIZED VIEWS 160
OBJECT MATERIALIZED VIEW 162
OBJECT RELATIONAL MATERIALIZED VIEWS 164
OBJECT-RELATIONAL DBMS 101

PERSONS

FIRST_NAME_P	LAST_NAME_P	ADDRESS_P

FIG. 2

4050505.4050504

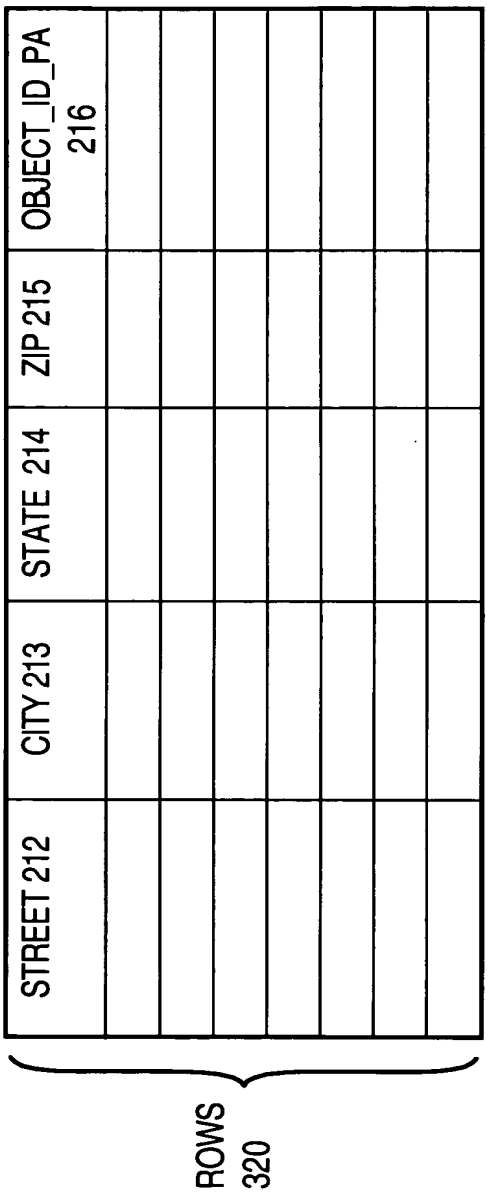

PERSON_ADDRESSES 310
STREET 212
CITY 213
STATE 214
ZIP 215
OBJECT_ID_PA 216
ROWS 320

FIG. 3

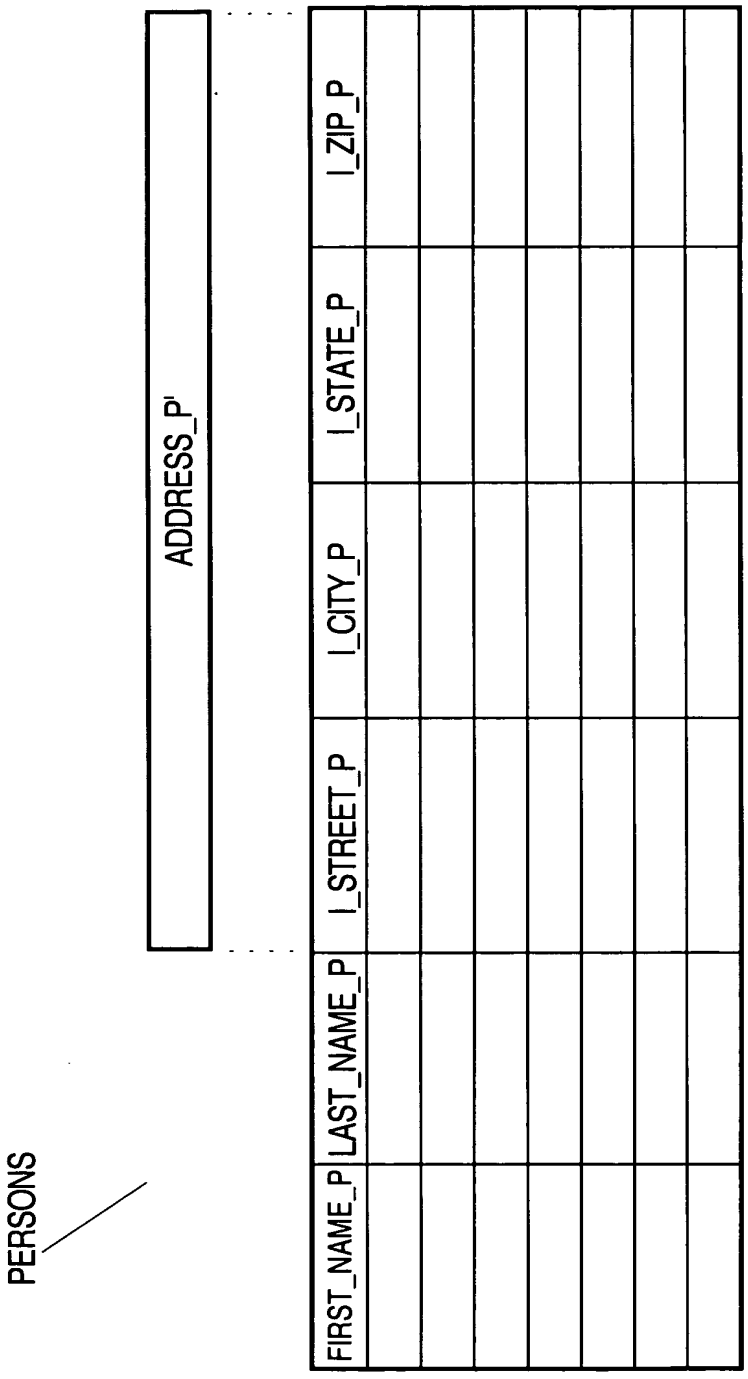

PERSONS
FIRST_NAME_P
LAST_NAME_P
I_STREET_P
I_CITY_P
I_STATE_P
I_ZIP_P
ADDRESS_P'

FIG. 4

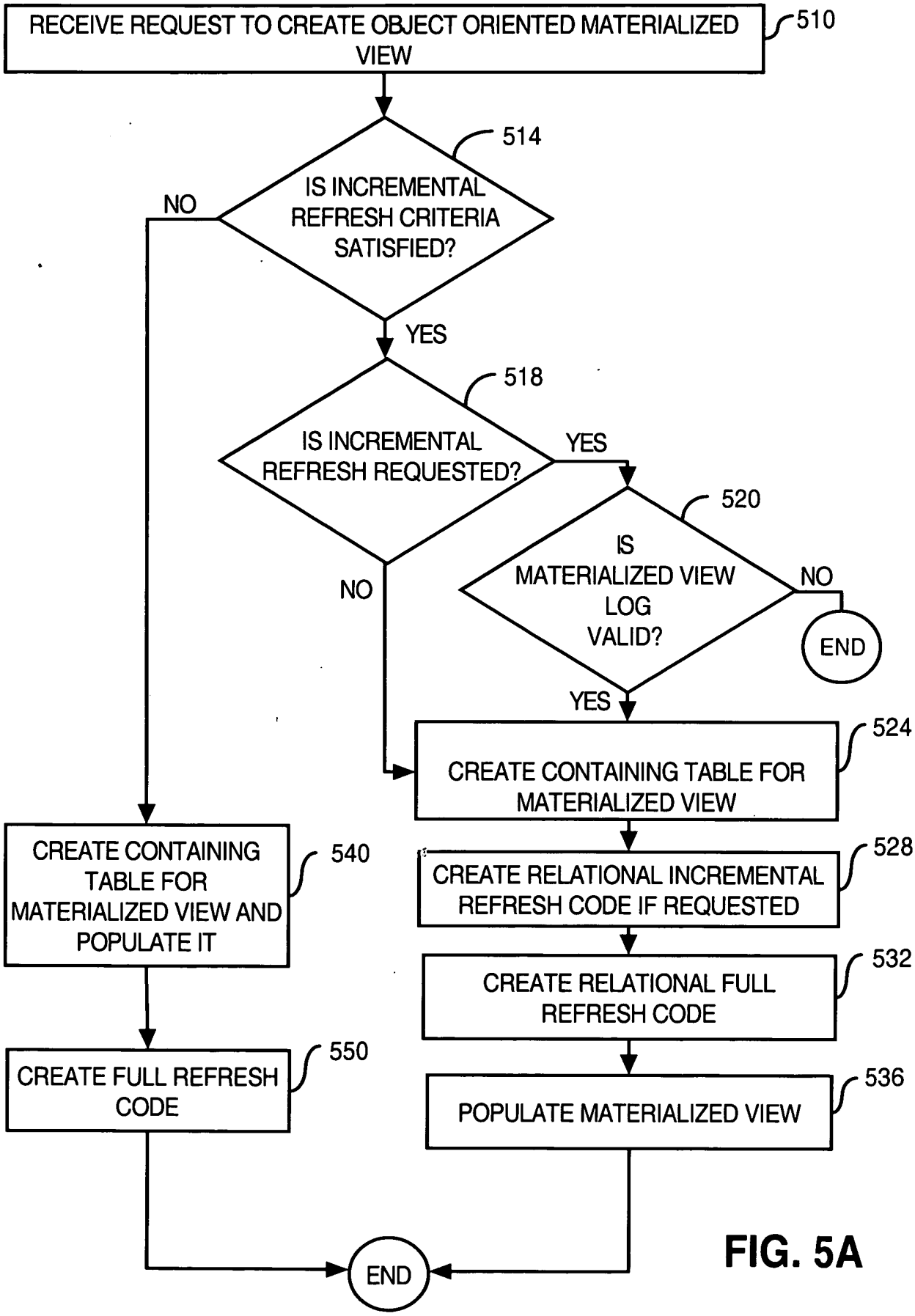


FIG. 5A

4006608.4004

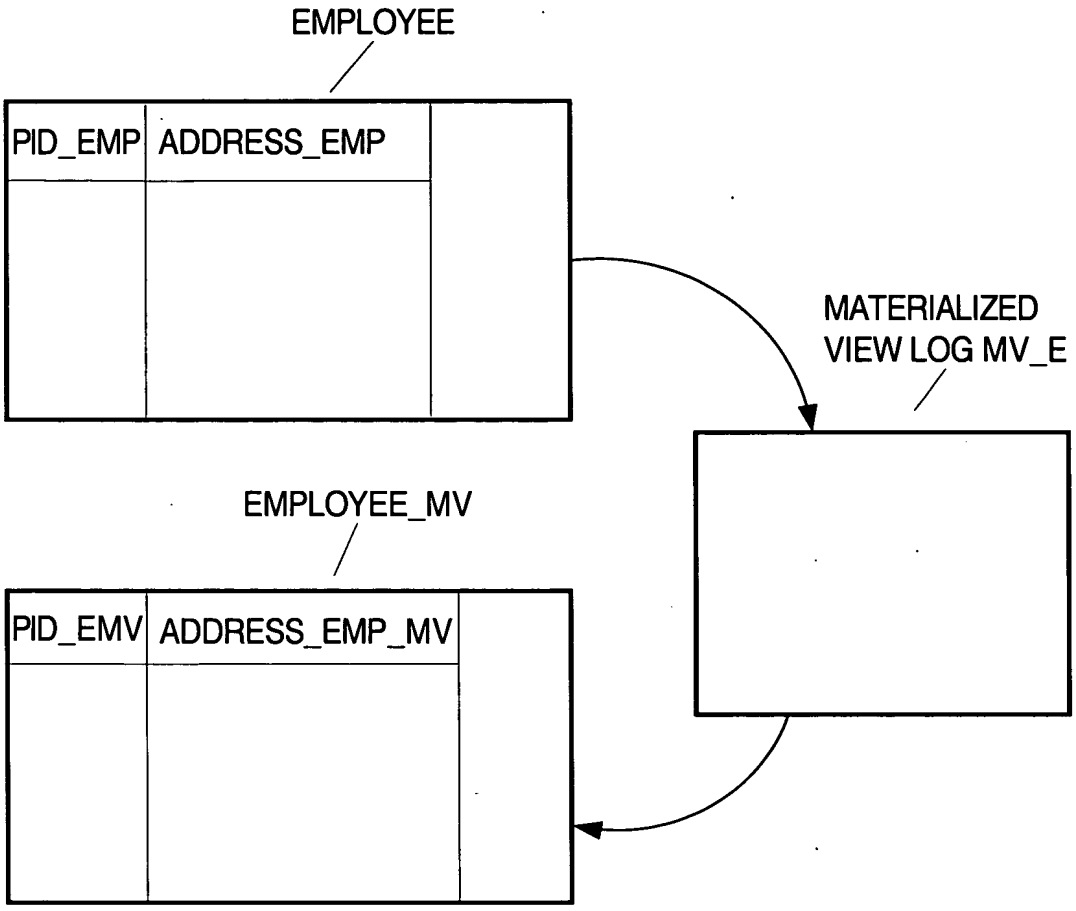


FIG. 5B

4005605 - 050404

CUSTOMER_OT

CU_OBJID	CUST_ADDRESS	

CUSTOMER_OMV

CUMV_OBJID	CUST_ADDRESS	

FIG. 5C

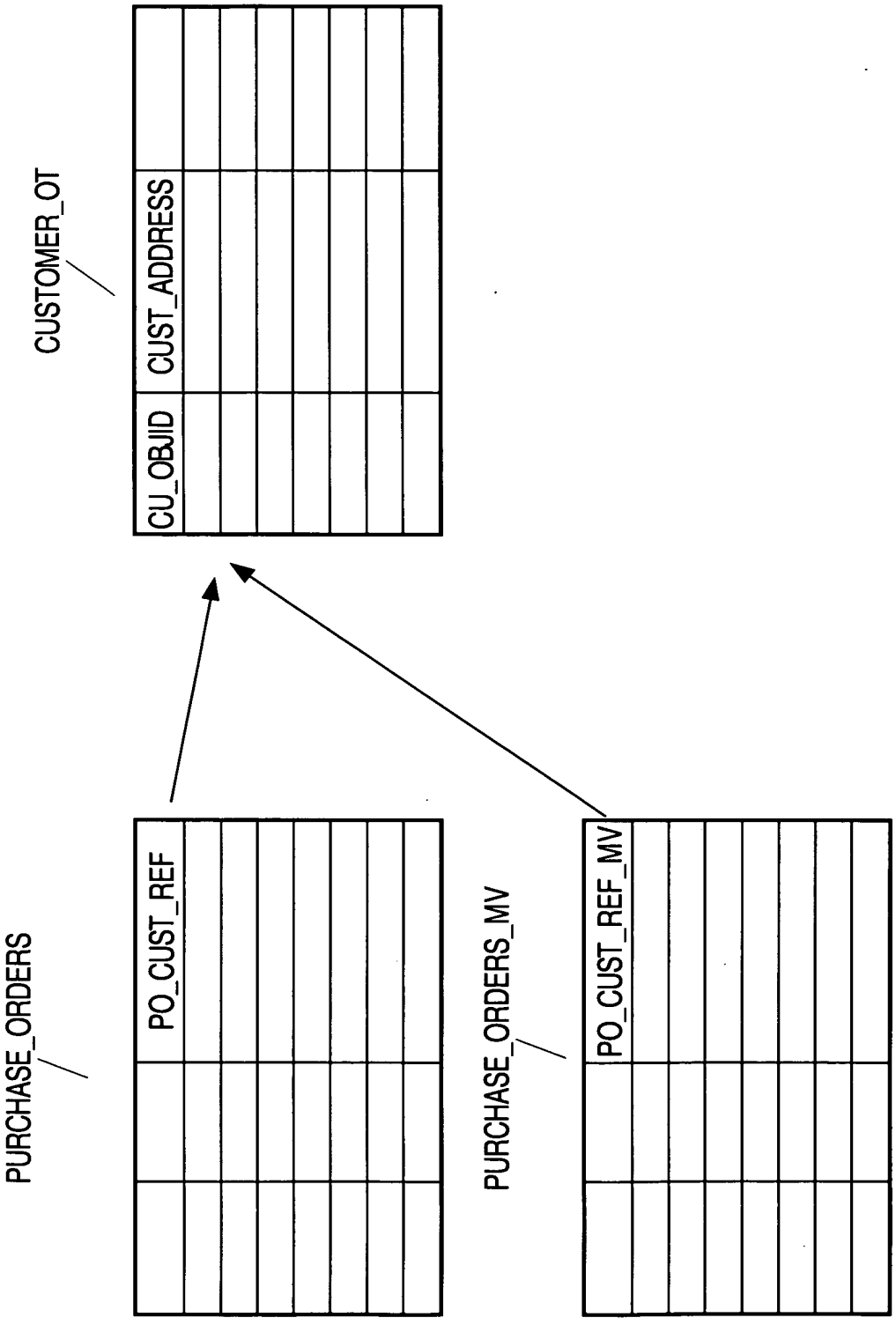

CUSTOMER_OT
CU_OBJID
CUST_ADDRESS
PURCHASE_ORDERS
PO_CUST_REF
PURCHASE_ORDERS_MV
PO_CUST_REF_MV

FIG. 6A

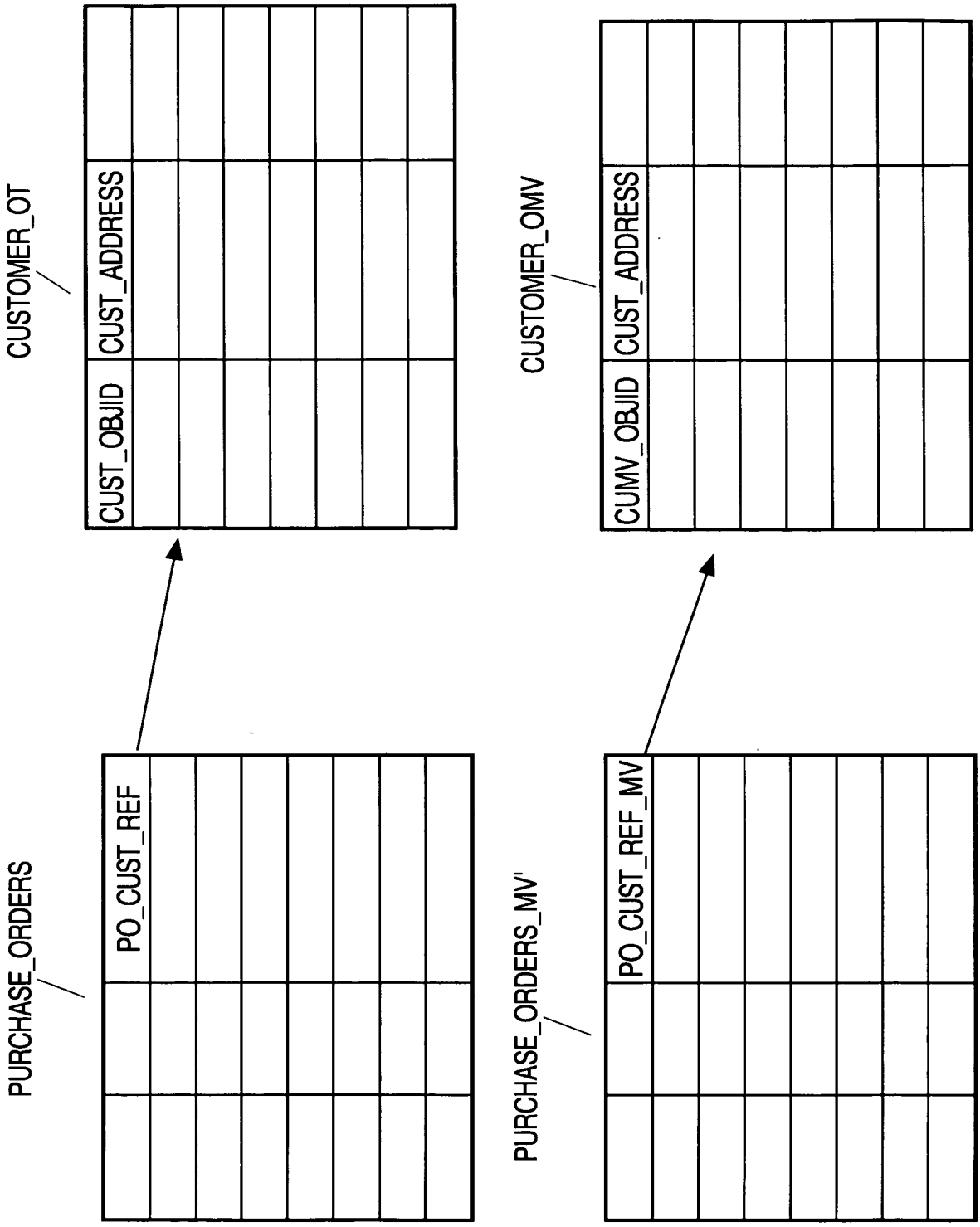
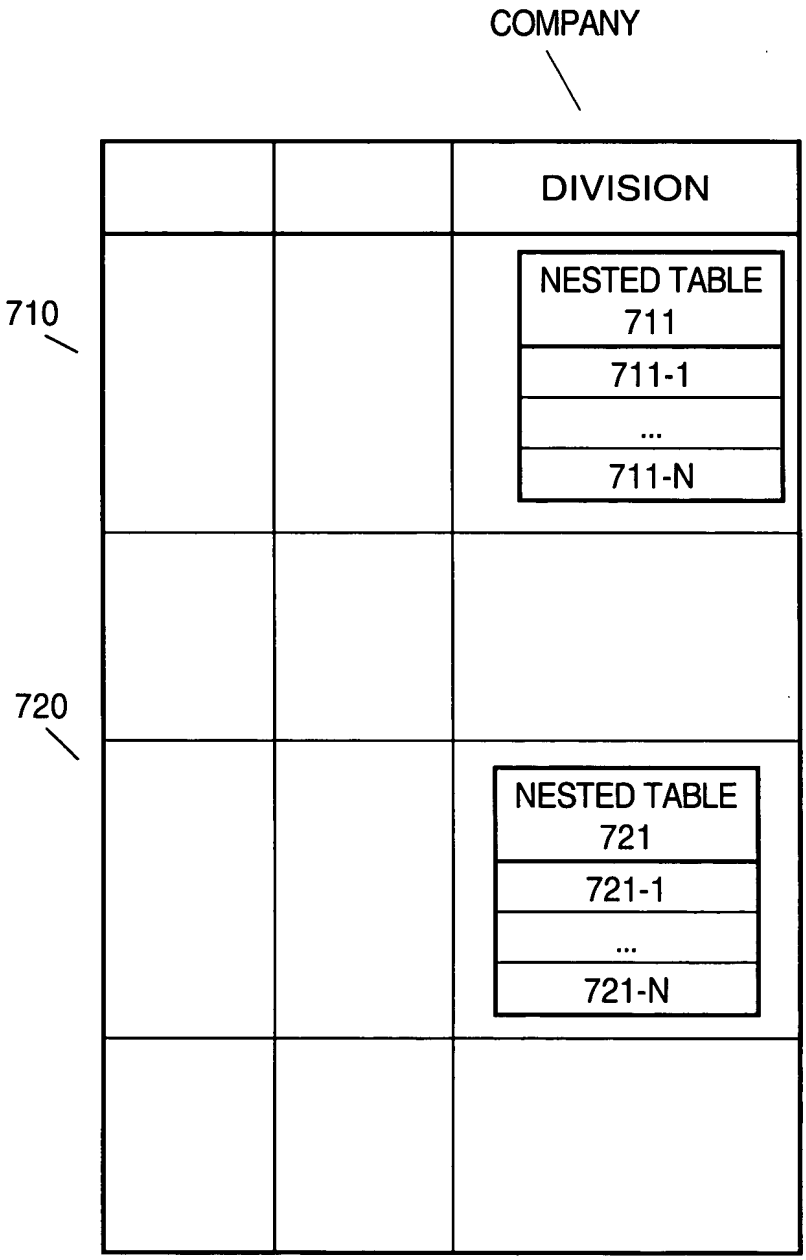

CUSTOMER_OT
CUST_OBJID
CUST_ADDRESS
CUSTOMER_OMV
CUMV_OBJID
CUST_ADDRESS
PURCHASE_ORDERS
PO_CUST_REF
PURCHASE_ORDERS_MV'
PO_CUST_REF_MV

FIG. 6B

FIG. 7A



Express Mail No. EL558817321US

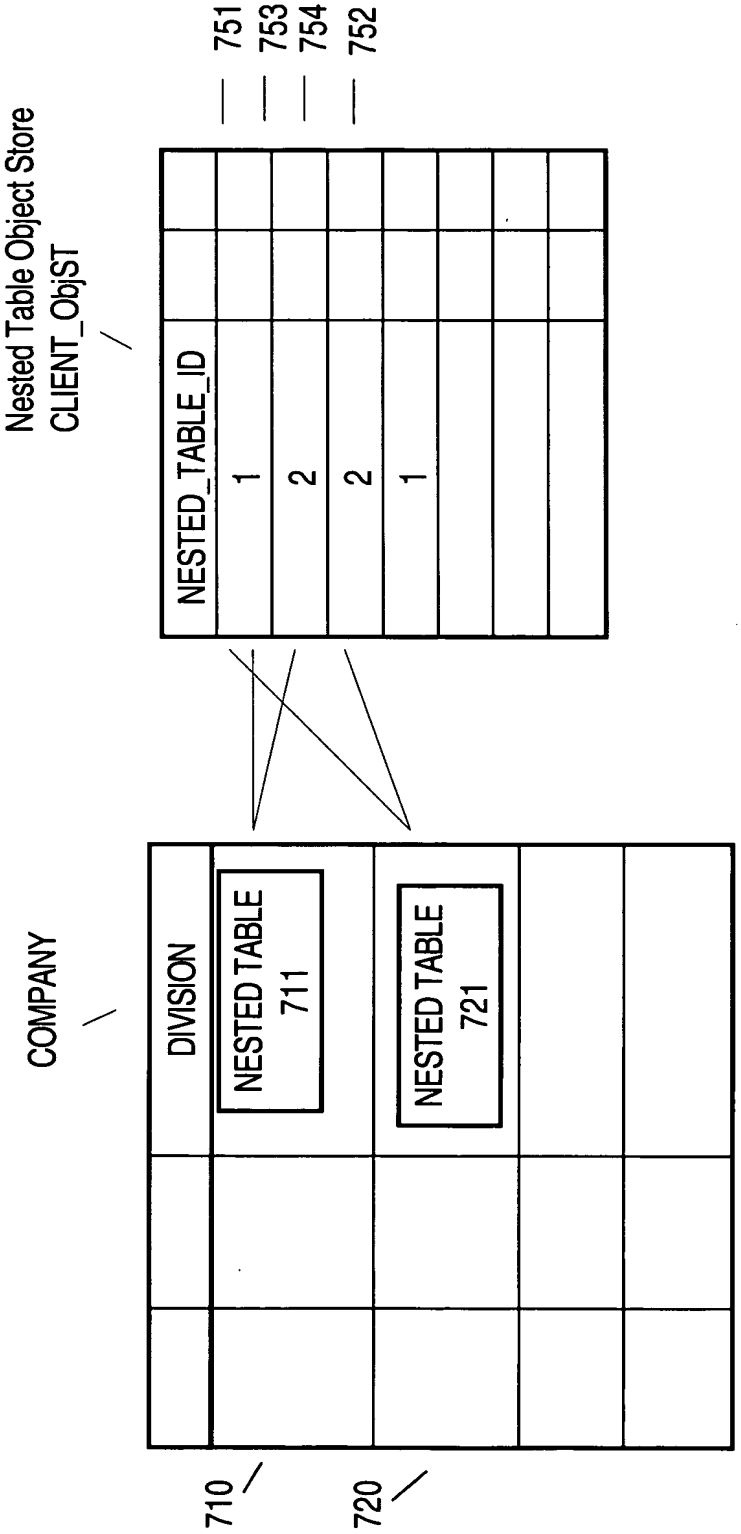
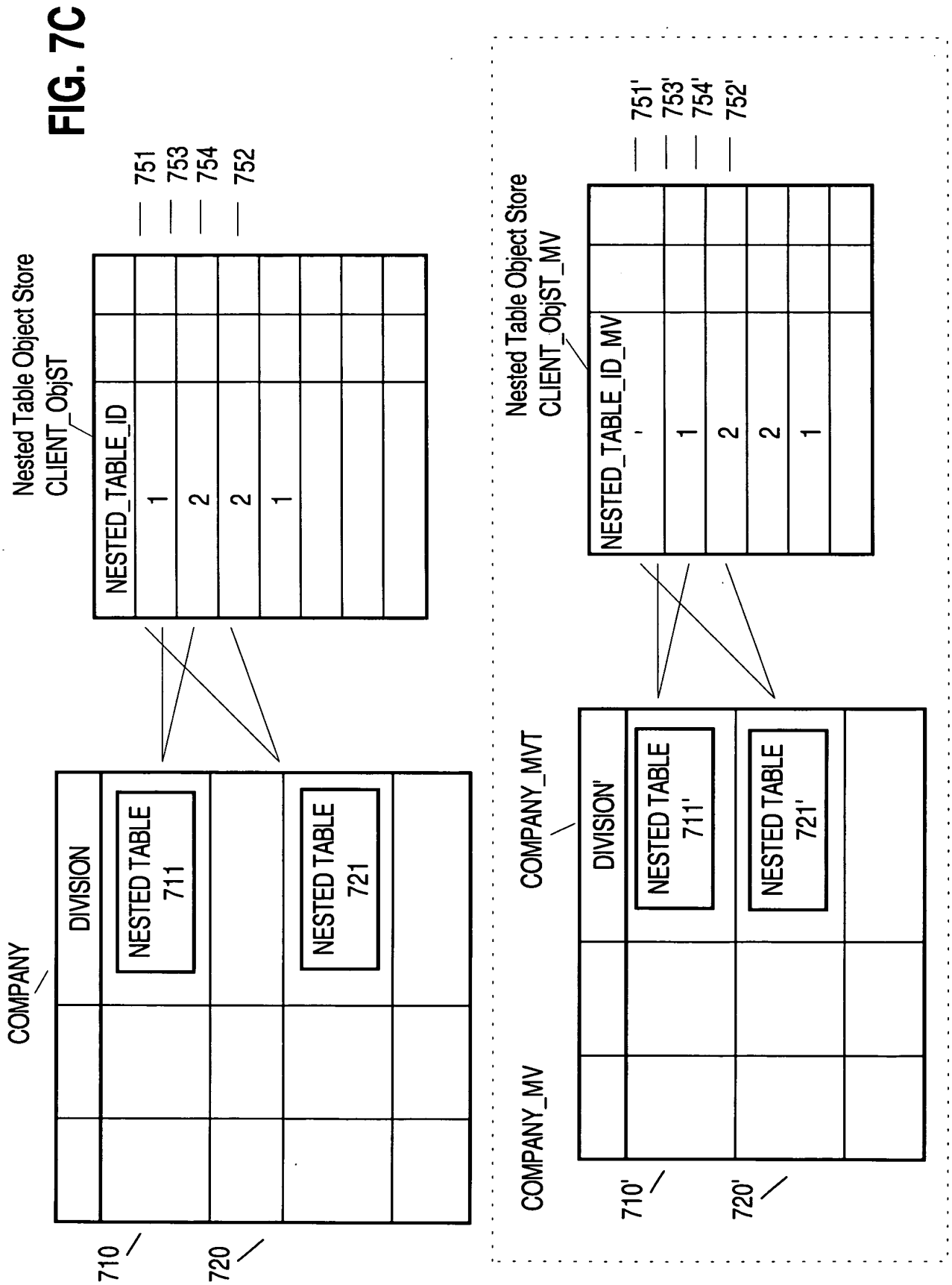

751
753
754
752
Nested Table Object Store
CLIENT_ObjST
NESTED_TABLE_ID
1
2
2
1
COMPANY
DIVISION
NESTED TABLE
711
NESTED TABLE
721
710
720

FIG. 7B

FIG. 7C


Nested Table Object Store
CLIENT_ObjST
NESTED_TABLE_ID
751
753
754
752
COMPANY
DIVISION
NESTED TABLE 711
NESTED TABLE 721
710
720
Nested Table Object Store
CLIENT_ObjST_MV
NESTED_TABLE_ID_MV
751'
753'
754'
752'
COMPANY_MVT
DIVISION'
NESTED TABLE 711'
NESTED TABLE 721'
COMPANY_MV
710'
720'

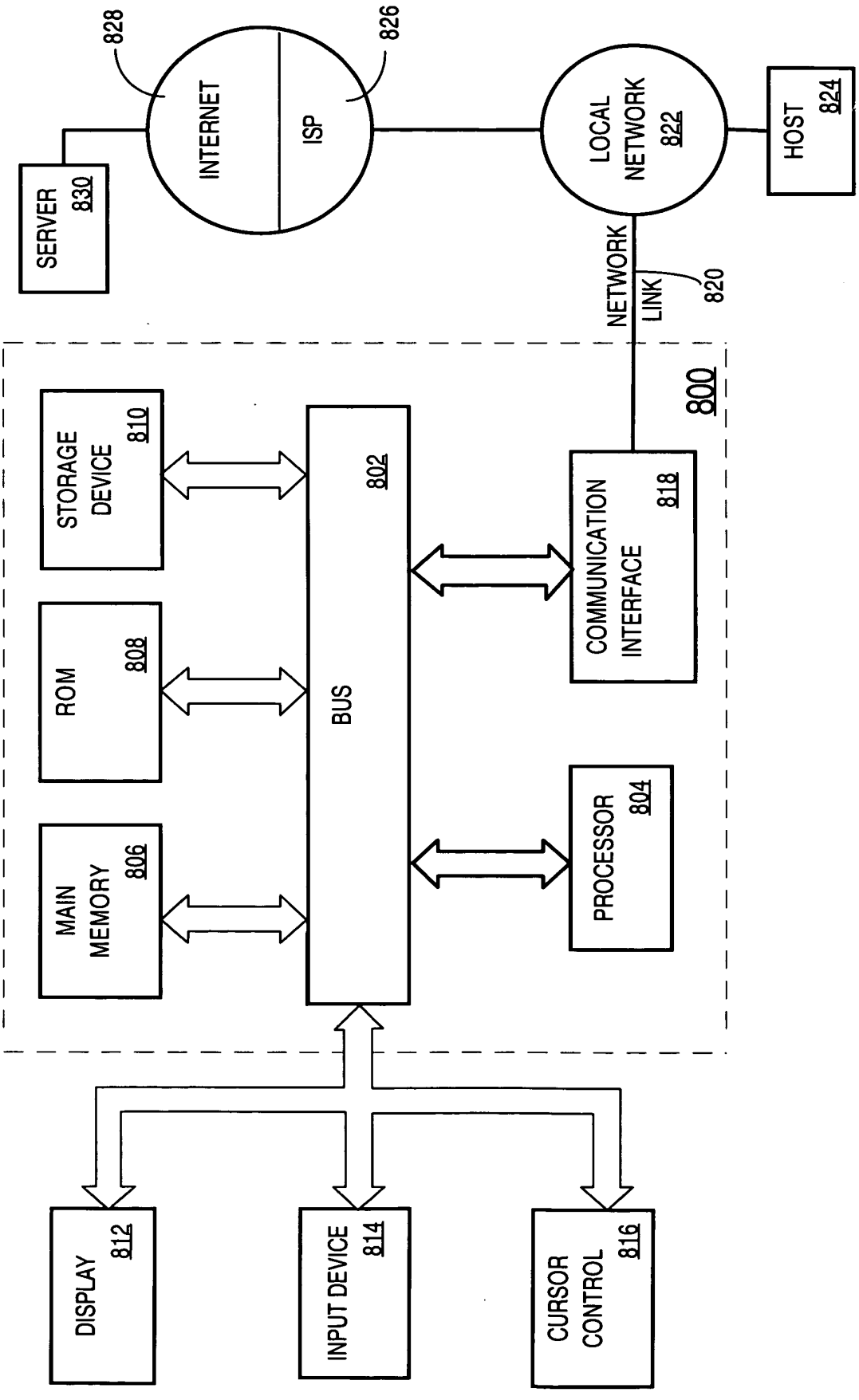

828
826
INTERNET
ISP
LOCAL NETWORK 822
HOST 824
SERVER 830
NETWORK LINK 820
800
STORAGE DEVICE 810
ROM 808
MAIN MEMORY 806
BUS 802
COMMUNICATION INTERFACE 818
PROCESSOR 804
DISPLAY 812
INPUT DEVICE 814
CURSOR CONTROL 816

FIG. 8